

WHAT IS CLAIMED IS:

1. An apparatus for encoding a transport stream, the apparatus comprising:  
2 a non-realtime content source for providing non-realtime content;  
3 a non-realtime encoder for encoding the non-realtime content into encoded non-  
4 realtime content;  
5 a realtime content source for providing realtime video and audio content;  
6 a realtime encoder for encoding the realtime video and audio content into encoded  
7 realtime video and audio;  
8 a remultiplexer for repacketizing the encoded non-realtime content and the  
9 encoded realtime video and audio into transport packets; and  
10 a re-timestamp unit coupled to the remultiplexer for providing timestamps to be  
11 applied to the transport packets in order to synchronize the realtime and non-realtime  
12 content therein.

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14 2. The apparatus of claim 1, where the apparatus is within a head-end of a cable  
15 distribution system.

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17 3. The apparatus of claim 1, further comprising:  
18 a common clock unit for providing a common clock signal to the re-timestamping  
19 unit and for generating a clock stream to be transmitted along with the transport stream to  
20 set-top terminals.

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22 4. The apparatus of claim 1, further comprising:  
23 a rate control unit for determining an encoding rate for the non-realtime content  
24 and for providing the encoding rate for the non-realtime content to the non-realtime  
25 encoder.

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27 5. The apparatus of claim 4, where the rate control unit predetermines said encoding  
28 rate for the non-realtime content according to an output rate of a final transport stream  
29 which includes both the realtime and non-realtime content.

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31 6. The apparatus of claim 4, where the rate control unit predetermines an encoding  
32 rate for the realtime content according to an output rate of a final transport stream which  
33 includes both the realtime and non-realtime content.